

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A sensing apparatus comprising:
a substrate composed of alumina and having a first side for a sensing element and a second side for electronics; and
a via comprising a linear hollow path formed from the first side of the substrate to the second side of the substrate and filled with an electrically conductive material for making electrical contact from the first side of the substrate to the second side of the substrate,
wherein the via is hermetically sealed from the first side of the substrate to the second side of the substrate.
2. (Cancelled)
3. (Previously Presented) A sensing apparatus according to Claim 1, wherein the electrically conductive material is a fritless ink.
4. (Original) A sensing apparatus according to Claim 3, wherein the fritless ink is a gold paste.
5. (Original) A sensing apparatus according to Claim 3, wherein the fritless ink is a platinum paste.
6. (Currently Amended) A sensing apparatus according to Claim 1, wherein the substrate is ceramic insulator.
7. (Original) A sensing apparatus according to Claim 1, wherein the substrate is substantially 92%-96% alumina.
8. (Original) A sensing apparatus according to Claim 1, wherein the second side is covered with a lid.
9. (Original) A sensing apparatus according to Claim 8, wherein the lid is made of gold.

10. (Original) A sensing apparatus according to Claim 1, further comprising a cap covering the via.

11. (Original) A sensing apparatus according to Claim 10, wherein the cap is made from alumina.

12. (Original) A sensing apparatus according to Claim 11, wherein the alumina cap is deposited using an ion beam assist deposition process.

13. (Original) A sensing apparatus according to Claim 1, wherein the via comprises a plurality of vias.

14. (Original) A sensing apparatus according to Claim 1, wherein the substrate is annealed.

15.-28. (Cancelled)

29. (Currently Amended) A sensing apparatus comprising:

a substrate composed of alumina and having a first area for a sensing element and a second area for electronics; and

a via comprising a linear hollow path formed from the first side of the substrate to the second side of the substrate and filled with an electrically conductive material for making electrical contact from the first area of the substrate to the second area of the substrate,

wherein the via is hermetically sealed from the first area of the substrate to the second area of the substrate.

30. (Previously Presented) A sensing apparatus according to Claim 29, wherein the via is filled with a conductive fritless ink material.

31. (Currently Amended) A sensing apparatus comprising:

a substrate composed of alumina and having a first side and a second side;

a sensor for sensing a biological condition and providing an electrical signals dependent upon the sensed biological condition, the sensor disposed on the first side of the substrate;

electronics for processing electrical signals provided by the sensor, the electronics disposed on the second side of the substrate;

at least one via, each via comprising a linear hollow path formed from the first side of the substrate to the second side of the substrate and filled with an electrically conductive material for making electrical contact from the first side of the substrate to the second side of the substrate,
wherein the via is hermetically sealed from the first side of the substrate to the second side of the substrate.

32. (Previously Presented) A sensing apparatus according to Claim 31, wherein each via comprises a conductive path formed of a single conductive material extending without interruption through the substrate from the first side of the substrate to the second side of the substrate.

33. (Previously Presented) A sensing apparatus according to Claim 32, wherein the single conductive material comprises a flowable conductive filler material that is disposed within the hollow path in a flowable form and hardened within the hollow path of each via to form a solid, filled via.

34. (Previously Presented) A sensing apparatus according to Claim 31, wherein each via comprises a flowable conductive filler material that is disposed within the hollow path in a flowable form and hardened within the hollow path to form a solid, filled via extending, without interruption, from the first side of the substrate to the second side of the substrate.

35. (Previously Presented) A sensing apparatus according to Claim 31, wherein the electrically conductive material is a fritless ink.

36. (Previously Presented) A sensing apparatus according to Claim 35, wherein the fritless ink is a gold paste.

37. (Previously Presented) A sensing apparatus according to Claim 35, wherein the fritless ink is a platinum paste.

38. (Previously Presented) A sensing apparatus according to Claim 31, wherein the substrate is substantially 92%-96% alumina.

39. (Previously Presented) A sensing apparatus according to Claim 1, wherein the linear hollow path defines a boundary between the electrically conductive material and the substrate.
40. (Previously Presented) A sensing apparatus according to Claim 29, wherein the linear hollow path defines a boundary between the electrically conductive material and the substrate.
41. (Previously Presented) A sensing apparatus according to Claim 31, wherein the linear hollow path defines a boundary between the electrically conductive material and the substrate.
42. (Previously Presented) A sensing apparatus according to Claim 1, wherein the substrate is insulating.
43. (Previously Presented) A sensing apparatus according to Claim 29, wherein the substrate is insulating.
44. (Previously Presented) A sensing apparatus according to Claim 31, wherein the substrate is insulating.
45. (Previously Presented) A sensing apparatus according to Claim 1, wherein the substrate is non-conducting and non-semiconducting.
46. (Previously Presented) A sensing apparatus according to Claim 29, wherein the substrate is non-conducting and non-semiconducting.
47. (Previously Presented) A sensing apparatus according to Claim 31, wherein the substrate is non-conducting and non-semiconducting.